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EXAMINER	
DOROSHENK, ALEXA A	

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**GROUP 1700**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 20031203

Application Number: 08/835,419  
Filing Date: April 09, 1997  
Appellant(s): FRAAS ET AL.

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James C. Wray  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed August 18, 2003.

**(1) Real Party in Interest**

A statement identifying the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) Status of Claims**

The statement of the status of the claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Invention**

The summary of invention contained in the brief is correct.

**(6) Issues**

The appellant's statement of the issues in the brief is correct.

**(7) Grouping of Claims**

Appellant's brief includes a statement that claims 1-4, 6-14 and 16-23 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

4,397,657	SELEP et al.	08-1983
4,781,796	BRIDLE et al.	11-1988
6,112,675	POTTER et al.	09-2000
5,743,924	DOSPOY et al.	04-1998
4,931,171	PIOTTER	06-1990

**(10) Grounds of Rejection**

Claims 1-4, 6, 11-14, 16, 19, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selep et al. (4,397,657) in view of Dospoy et al. (5,743,924).

Selep discloses an apparatus and a process for charging or feeding coal particles into a pressurized gasification reactor in such a way as to prevent air in the ambient atmosphere from flowing into the apparatus and to prevent gases in the reactor from flowing into the feed apparatus, thereby avoiding the development of a combustible mixture of gases within the apparatus. These objectives are achieved via a feed apparatus which includes first and second rotary gas locks and means for injecting nitrogen, steam and a buffer gas (e.g., clean product gas from the gasification reactor) into the apparatus. It has been determined that the injection of steam (or clean product gas from the gasification reactor) in Selep's apparatus and process would necessarily preheat the coal particles and (along with the injected nitrogen) would remove oxygen released from the heated coal particles thereby transporting it away (i.e., via conduit 51 of patentee's apparatus) as required by the independent apparatus and the process claims on appeal.

It is also held that patentee's apparatus and process would necessarily and inherently achieve these functions since patentee's apparatus elements and process steps correspond to those recited in the claims.

Though Selep is silent to providing a vibrating machine connected to the vessel of coal particles, Selep recognizes that a "suitable delivery device" (col. 2, lines 62-66) can be used to feed the coal.

Dospoy et al. disclose a coal vessel (10) and disclose wherein the vessel is connected to a vibrating machine (14) which also corresponds to a coal feeding means (col. 2, lines 45-47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the vibrating feeding means of Dospoy et al. as the feeding means in the apparatus of Selep as it is merely the selection of a coal feeding means known to feed to a gas-swept chamber (col. 2, lines 47-50) and since Selep recognizes that a "suitable delivery device" (col. 2, lines 62-66) can be used to feed the coal. Additionally, one of ordinary skill in the art would have a reasonable expectation of success as well as have an ability to recognize the inherent advantages that a vibrating feeder would provide to a device requiring a coal feed.

Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selep et al. (4,397,657) in view of Potter et al. (6,112,675).

Selep discloses an apparatus and a process for charging or feeding coal particles into a pressurized gasification reactor in such a way as to prevent air in the ambient atmosphere from flowing into the apparatus and to prevent gases in the reactor

from flowing into the feed apparatus, thereby avoiding the development of a combustible mixture of gases within the apparatus. These objectives are achieved via a feed apparatus which includes first and second rotary gas locks and means for injecting nitrogen, steam and a buffer gas (e.g., clean product gas from the gasification reactor) into the apparatus. It has been determined that the injection of steam (or clean product gas from the gasification reactor) in Selep's apparatus and process would necessarily preheat the coal particles and (along with the injected nitrogen) would remove oxygen released from the heated coal particles thereby transporting it away (i.e., via conduit 51 of patentee's apparatus) as required by the independent apparatus and the process claims on appeal.

It is also held that patentee's apparatus and process would necessarily and inherently achieve these functions since patentee's apparatus elements and process steps correspond to those recited in the claims.

Selep does not teach injecting the flue gas back into the apparatus.

Potter et al. teaches a similar apparatus and process of carbonaceous material treatment wherein low oxygen content flue gas is used as a sweep gas and inhibits combustion (col. 3, lines 30-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Potter et al. to the apparatus and process of Selep in order to make use of a product (flue gas) generated by Selep and to create an efficient apparatus and process.

Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selep et al. (4,397,657) in view of Bridle et al. (4,781,796).

Selep discloses an apparatus and a process for charging or feeding coal particles into a pressurized gasification reactor in such a way as to prevent air in the ambient atmosphere from flowing into the apparatus and to prevent gases in the reactor from flowing into the feed apparatus, thereby avoiding the development of a combustible mixture of gases within the apparatus. These objectives are achieved via a feed apparatus which includes first and second rotary gas locks and means for injecting nitrogen, steam and a buffer gas (e.g., clean product gas from the gasification reactor) into the apparatus. It has been determined that the injection of steam (or clean product gas from the gasification reactor) in Selep's apparatus and process would necessarily preheat the coal particles and (along with the injected nitrogen) would remove oxygen released from the heated coal particles thereby transporting it away (i.e., via conduit 51 of patentee's apparatus) as required by the independent apparatus and the process claims on appeal.

It is also held that patentee's apparatus and process would necessarily and inherently achieve these functions since patentee's apparatus elements and process steps correspond to those recited in the claims.

Selep is silent to providing the non-condensable combustible gases to partially burn the gases and supply them to the bed of coal particles to serve as a sweep gas.

Bridle et al. discloses a furnace for organic matter and teaches wherein resulting non-combustible gases can be recycled to a heating zone and furnace (to burn) and

operate as sweep/purge gases (col. 8, lines 54-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Bridle et al. to the apparatus and process of Selep in order to make use of a product generated by Selep and to create an efficient apparatus and process.

Claims 10, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selep et al. (4,397,657) in view of Piotter (4,931,171).

Selep discloses an apparatus and a process for charging or feeding coal particles into a pressurized gasification reactor in such a way as to prevent air in the ambient atmosphere from flowing into the apparatus and to prevent gases in the reactor from flowing into the feed apparatus, thereby avoiding the development of a combustible mixture of gases within the apparatus. These objectives are achieved via a feed apparatus which includes first and second rotary gas locks and means for injecting nitrogen, steam and a buffer gas (e.g., clean product gas from the gasification reactor) into the apparatus. It has been determined that the injection of steam (or clean product gas from the gasification reactor) in Selep's apparatus and process would necessarily preheat the coal particles and (along with the injected nitrogen) would remove oxygen released from the heated coal particles thereby transporting it away (i.e., via conduit 51 of patentee's apparatus) as required by the independent apparatus and the process claims on appeal.

It is also held that patentee's apparatus and process would necessarily and inherently achieve these functions since patentee's apparatus elements and process steps correspond to those recited in the claims.

Though Selep teaches heating of the solid particles of coal, Selep is silent to providing ceramic balls in the preheat of the furnace and circulating the balls from the furnace to the pretreatment vessel.

Piotter teaches a similar carbonaceous material treatment apparatus (col. 1, lines 5-10) and process wherein ceramic balls are heated and circulated to and from a furnace and a retort as a heating technique (col. 2, lines 25-33). Piotter also teaches wherein this technique is especially used with when a solid material is to be heated (col. 2, lines 23-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the heating technique of circulating ceramic balls, as taught by Piotter, in the apparatus and process of Selep as it is merely the selection of a solid carbonaceous heating method and means known to be effective in the art and one of ordinary skill would have a reasonable expectation of success as well as have an ability to recognize the inherent advantages that a circulating ceramic balls heating technique would provide to a device.

### **(11) Response to Argument**

#### General Arguments

Appellant argues that the Examiner's action in reopening prosecution is in error and that the commissioner has not authorized such an action.

To clarify this issue, the examiner has provided the following summary of the relevant prosecution history.

In page 3, paragraph 10 of the examiner's answer of February 8, 1999, the previous examiner stated:

"The rejections of claims 5, 10, 15 and 20 are hereby dropped by the examiner. The examiner agrees with appellant that they are the first ever to use "vibrating the pretreatment vessel" in a coal pyrolysis apparatus (claims 5 and 15). The examiner agrees with appellant that they are the first ever to use "ceramic balls" to heat coal in a pyrolysis apparatus."

In the Decision by the Board of Patent Appeals and Interferences of January 24, 2002, the Board sustained the examiner's §102 and §103 rejections of claims 1-4, 6, 9, 11-14, 16 in view of the Selepe reference, however, they did not sustain the corresponding rejections of claims 7, 8, 17 and 18, based on the Selepe reference.

Appellant, in response to the affirmation-in-part, submitted amended claims which incorporate the subject matter of each of the dependent claims which were indicated by the previous examiner as allowable and those not upheld in view of the Selepe reference by the Board along with the language of claim 1 as independent claims.

The examiner holds that reopening prosecution in this application is proper. The decision of reopening prosecution in an application decided upon by the Board of Patent Appeals and Interferences has been delegated to the technology center directors, as representative of the commissioner. The examiner notes that Jacqueline Stone, Director of Technology Center 1700, has signed the non-final office action of Paper No. 17. The examiner also makes note that it is the responsibility of the Office to make an appropriate and sound rejection if it becomes aware of new art. Even though no new

issues were raised by the amendment of Paper No. 16, new art was made aware and therefore an appropriate and sound rejection was made.

Appellant repeatedly presents arguments directed toward the Selep reference, on its own, with regard to the limitations of the original claim 1.

The examiner finds that these arguments are without merit since the Board of Patent Appeals and Interferences has affirmed that the Selep reference reads on all of these limitations as discussed in the Decision on Appeal filed January 24, 2002 and again treated in response to the request for rehearing filed March 20, 2003. In order to avoid redundancy, the examiner has not further responded to these arguments in the responses below.

In response to applicant's repeated arguments that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Selep and Dospoy, Claims 1-4, 6, 9, 11-14, 16, 19, 22 and 23

Appellant argues that there is no suggestion to combine the references and that the two would lead away from one another.

The examiner respectfully disagrees with appellant. Selep recognizes that a "suitable delivery device" (col. 2, lines 62-66) can be used to feed the coal to the gas-locked device. The examiner has provided the Dospoy et al. reference as teaching a known and suitable coal feeding means to a gas-swept chamber (col. 2, lines 47-50).

Appellant states that the dependent claims (2-4, 6, 9, 12-14, 16, 19, 22 and 23) would not have been obvious.

Again, it is noted that in the Decision by the Board of Patent Appeals and Interferences of January 24, 2002, the Board sustained the examiner's §102 and §103 rejections of these dependent claims in view of the Selep reference.

Selep and Potter, Claims 7 and 17

Appellant argues that that there is no suggestion to combine the references and that there is no teaching in the references to combine them.

The examiner respectfully disagrees with appellant. In the device of Selep, a low oxygen content flue gas is produced. Potter et al. teaches a device which also produces a low oxygen content flue gas and further teaches wherein this gas is used as a sweep gas and inhibits combustion (col. 3, lines 30-34). It is held by the examiner that Potter et al.'s teaching of a use for a product which is already generated by Selep is sufficient suggestion to combine the references.

Selep and Bridle, Claims 8 and 18

Appellant argues that that there is no suggestion to combine the references and that there is no motivation in the references to combine them.

The examiner respectfully disagrees with appellant. Selep produces non-condensable combustible gases. Bridle et al. teaches wherein the same product of Selep, non-combustible gases, can be recycled to a heating zone and furnace (to burn) and operate as sweep/purge gases (col. 8, lines 54-60). It is held by the examiner that Bridle et al.'s teaching of a use for a product which is already generated by Selep is sufficient suggestion to combine the references.

Selep and Piotter, Claims 10, 20 and 21

Appellant argues that that there is no suggestion to combine the references and that there is no motivation in the references to combine them.

Piotter teaches a similar carbonaceous material treatment apparatus (col. 1, lines 5-10) and process wherein ceramic balls are heated and circulated to and from a furnace and a retort as a heating technique (col. 2, lines 25-33). Piotter also teaches wherein this heating means is used especially with regard to when a solid material is to be heated (col. 2, lines 23-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the heating technique of circulating ceramic balls, as taught by Piotter, in the apparatus and process of Selep as it is merely the selection of a solid carbonaceous heating method and means known to be effective in the art and one of ordinary skill would have a reasonable expectation of success as well as have an ability to recognize the inherent advantages that a circulating ceramic balls heating technique would provide to a device.

For the above reasons, it is believed that the rejections should be sustained.

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Art Unit: 1764

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Respectfully submitted,

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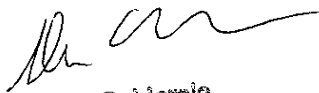
December 3, 2003

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